

In the claims:

All claims in the application are indicated below.

1. (Previously presented) A data output method for rendering at one or more output devices data content accessed from a wireless mobile information apparatus, the one or more output devices and the wireless mobile information apparatus not being in wired communication with each other, the method comprising:

establishing at the wireless mobile information apparatus a radio wireless communication channel directly between the wireless mobile information apparatus and the one or more output devices, the radio wireless communication channel including a radio frequency wireless communication channel;

receiving at the wireless mobile information apparatus over the radio wireless communication channel one or more device-dependent attributes corresponding to the one or more output devices;

selecting at the wireless mobile information apparatus a selected output device from the one or more output devices;

generating device-dependent output data from the data content based at least in part on the one or more attributes relating to the selected output device; and

delivering the device-dependent output data over the radio wireless communication channel directly from the wireless mobile information apparatus to the selected output device for rendering.

2. (Cancelled)

3. (Previously presented) The method of claim 1 in which the data content resides in the wireless mobile information apparatus.

4. (Previously presented) The method of claim 1 further including obtaining the data content from a data source distinct from the wireless mobile information apparatus.

5. (Previously presented) The method of claim 1 further comprising obtaining authentication information from the wireless mobile information

apparatus and authenticating permission for the wireless mobile information apparatus to access the selected output device.

6. (Previously presented) The method of claim 1 further including obtaining from the wireless mobile information apparatus payment information to administer payment for the rendering provided by the selected output device.

7. (Previously presented) The method of claim 1 further including the wireless mobile information apparatus discovering the one or more output devices as being available to render output data.

8. (Previously presented) The method of claim 7 in which discovering the one or more output devices includes the wireless mobile information apparatus broadcasting a discovery request and awaiting one or more responses from the one or more output devices.

9. (Previously presented) The method of claim 7 in which discovering the one or more output devices includes the one or more output devices broadcasting its or their availability.

10. (Cancelled)

11. (Previously presented) The method of claim 7 in which the discovering of one or more output devices involves determining if the one or more output devices satisfy one or more output requirements.

12. (Previously presented) The method of claim 11 in which the one or more output requirements include one or more of price, quality of service, and availability.

13. (Previously presented) The method of claim 7 in which the wireless mobile information apparatus discovers the one or more output devices with wireless communication.

14. (Original) The method of claim 1 in which the attributes associated with the one or more output devices include information characterizing the one or more output devices.

15. (Previously presented) The method of claim 14 in which the information characterizing the one or more output devices includes one or more of a make identifier, a model identifier, an output device type identifier, an output

data format identifier, an output device identifier, security information, or authentication information, individually or in combination.

16. (Original) The method of claim 1 in which the attributes associated with the one or more output devices include information characterizing output services provided by the one or more output devices.

17. (Original) The method of claim 16 in which the information characterizing the output services includes one or more of a quality of service indicator, an availability of service indicator and a service fee indicator.

18. (Original) The method of claim 1 in which the selecting of the one or more output devices includes input from a user.

19. (Previously presented) The method of claim 1 in which the selecting of the one or more output devices is based at least in part upon a predetermined default criterion that is stored in the wireless mobile information apparatus.

20. (Previously presented) The method of claim 1 further including receiving at the wireless mobile information apparatus via the radio wireless communication channel components enabling the data content to be rendered by the selected one or more output devices.

21. (Previously presented) The method of claim 20 in which the components include software code or a software application.

22. (Cancelled)

23. (Previously presented) The method of claim 20 in which the components correspond to one or more of a device driver, a printer driver, an output driver, an audio driver, a display driver, and a user interface, individually or in combination.

24. (Previously presented) The method of claim 1 in which the wireless mobile information apparatus includes a digital camera, an Internet-enabled cellular phone, a smart phone, an Internet appliance, or a personal computer.

25. (Previously presented) The method of claim 1 in which the one or more output devices include one or more of a printing device, a display device, a projection device, and an audio output device.

26. (Cancelled)

27. (Cancelled)

28. (Previously presented) The method of claim 1 in which generating device-dependent output data includes at least partial raster image processing of the data content.

29. (Previously presented) The method of claim 1 further including delivering the output data to an output controller associated with the selected output device.

30. (Original) The method of claim 29 in which the output controller is one of a server, an external controller and a data access point.

31. (Previously presented) The method of claim 29 further including performing image processing on the output data at the selected output device.

32. (Cancelled)

33. (Previously presented) A data output method for rendering at a selected output device data content accessed from a wireless mobile information apparatus, the selected output device and the wireless mobile information apparatus not being in wired communication with each other, the method comprising:

establishing a radio wireless communication channel directly between the wireless mobile information apparatus and the selected output device, the radio wireless communication channel including a radio frequency wireless communication channel;

receiving at the wireless mobile information apparatus and over the radio wireless communication channel one or more components associated with the selected output device, the one or more components including at least a device-dependent attribute corresponding to the selected output device;

conforming at the wireless mobile information apparatus the data content to device-dependent output data associated with the selected output device employing at least in part the one or more components; and

delivering the device-dependent output data to the selected output device for rendering.

34. (Cancelled)

35. (Previously presented) The method of claim 33 in which the data content resides in the wireless mobile information apparatus.

36. (Previously presented) The method of claim 33 further including obtaining the data content from a data source distinct from the wireless mobile information apparatus.

37. (Previously presented) The method of claim 33 further comprising obtaining authentication information from the wireless mobile information apparatus and authenticating permission for the wireless mobile information apparatus to access the selected output device.

38. (Previously presented) The method of claim 33 further including obtaining from the wireless mobile information apparatus payment information to administer payment for rendering service provided at the selected output device.

39. (Previously presented) The method of claim 33 further including the wireless mobile information apparatus discovering the selected output device via radio wireless discovery.

40. (Previously presented) The method of claim 39 in which discovering the selected output device includes the wireless mobile information apparatus broadcasting a discovery request and awaiting a response from the selected output device.

41. (Previously presented) The method of claim 39 in which discovering the selected output device includes the selected output device broadcasting information about its availability and awaiting to be contacted by the wireless mobile information apparatus.

42. (Cancelled)

43. (Previously presented) The method of claim 39 in which the discovering of the selected output device involves determining if the selected output device satisfies one or more of an output requirement, a service requirement, and a compatibility requirement, individually or in combination.

44. (Previously presented) The method of claim 43 in which the one or more requirements include one or more of price, quality of service, and availability.

45. (Previously presented) The method of claim 39 in which the wireless mobile information apparatus discovers the selected output device with wireless communication.

46. (Original) The method of claim 33 in which the one or more components is or are stored in the selected output device.

47. (Original) The method of claim 33 in which the one or more components are stored in one or more output controllers associated with the output devices.

48. (Previously presented) The method of claim 33 in which the one or more components include at least part of a printer driver, an audio driver, a display driver, and a projection driver, independently or in combination.

49. (Previously presented) The method of claim 33 in which the one or more components include software code or a software application.

50. (Cancelled)

51. (Previously presented) The method of claim 33 in which the one or more components include information relating to one or more of a projection device, a printer, a display device, an audio device, and a user interface, independently or in combination.

52. (Cancelled)

53. (Previously presented) The method of claim 33 further including selecting at the wireless mobile information apparatus the selected output device from among plural output devices based on one or more selection criteria.

54. (Original) The method of claim 53 in which the one or more selection criteria are obtained from a user.

55. (Previously presented) The method of claim 53 in which the one or more selection criteria are automatically defined based on a predetermined default stored on the wireless mobile information apparatus.

56. (Original) The method of claim 33 in which conforming the data content includes performing raster image processing on the data content.

57. (Original) The method of claim 33 further including performing raster image processing on the output data at the selected output device.

58. (Previously presented) The method of claim 33 further including converting the output data into a form compatible to one of an output engine, a display engine, an audio engine, a printer engine, an output controller, a display controller, and a printer controller, individually or in combination.

59. (Previously presented) The method of claim 33 in which the output data is further processed in an output controller associated with the selected output device before being delivered to the selected output device.

60. (Previously presented) The method of claim 33 in which the wireless mobile information apparatus includes one or more of a digital camera, an Internet-enabled cellular phone, a smart phone, an Internet appliance, and a personal computer.

61. (Previously presented) The method of claim 33 in which the output device includes one of a printing device, a display device, a projection device, and an audio output device.

62. (Original) The method of claim 33 in which the output data includes compressed data.

63. (Previously presented) In a computer-readable medium, data output software for rendering at one or more output devices data content accessed from a wireless mobile information apparatus, the one or more output devices and the wireless mobile information apparatus not being in wired communication with each other, the medium comprising:

- software for establishing a radio communication channel directly between the wireless mobile information apparatus and the one or more output devices, the radio communication channel including a radio frequency wireless communication channel;

- software for receiving at the wireless mobile information apparatus over the radio communication channel one or more device-dependent attributes corresponding to the one or more output devices;

- software for selecting at the wireless mobile information apparatus a selected output device from the one or more output devices;

software for generating device-dependent output data from the data content based at least in part on the one or more attributes relating to the selected output device; and

software for delivering the device-dependent output data over the radio communication channel directly from the wireless mobile information apparatus to the selected output device for rendering.

64. (Previously presented) The medium of claim 63 further including software for discovering one or more output devices via wireless discovery.

65. (Previously presented) In a computer-readable medium, data output software for rendering at a selected output device data content accessed from a wireless mobile information apparatus, the selected output device and the wireless mobile information apparatus not being in wired communication with each other, the medium comprising:

software for establishing a radio wireless communication channel directly between the wireless mobile information apparatus and the selected output device, the radio wireless communication channel including a radio frequency wireless communication channel;

software for receiving at the wireless mobile information apparatus and over the radio wireless communication channel one or more components associated with the selected output device, the one or more components including an indication of an output data associated with the selected output device;

software for conforming at the wireless mobile information apparatus the data content to a device-dependent output data associated with the selected output device employing at least in part the one or more components; and

software for delivering the device-dependent output data to the selected output device over the radio wireless communication channel for rendering.

66. (Previously presented) A data output method for rendering at one or more output devices associated with a selected output system data content accessed from a wireless mobile information apparatus, the output system and



the wireless mobile information apparatus not being in wired communication with each other, the method comprising:

discovering the selected output system via radio wireless discovery;  
establishing a radio communication channel directly between the wireless mobile information apparatus and the selected output system, the radio communication channel including a radio frequency wireless communication channel at the mobile information apparatus and at the output system;  
receiving at the mobile information apparatus over the radio communication channel one or more attributes corresponding to the one or more output devices associated with the output system;  
generating device-dependent output data corresponding to the one or more output devices from the data content based at least in part on the one or more attributes; and  
delivering the device-dependent output data to the selected output system for rendering.

67. (Cancelled)

68. (Cancelled)

69. (Original) The method of claim 66 in which the selected output system includes a network.

70. (Original) The method of claim 66 in which the selected output system includes at least one output device and at least one output controller.

71. (Original) The method of claim 66 in which an output controller in the selected output system communicates with the wireless mobile information apparatus.

72. (Previously presented) The method of claim 71 in which the output controller is associated with one or more output devices, the output devices being at least one of a display device, projection device, a printing device, and an audio device, individually or in combination.

73. (Original) The method of claim 71 in which the output controller is one of a server, an external controller and a data access point.

74. (Original) The method of claim 71 in which the output controller receives the data content.

75. (Original) The method of claim 74 in which the output controller performs raster image processing on the data content.

76. (Original) The method of claim 74 further including converting the data content into a form compatible to the selected one or more output devices.

77. (Original) The method of claim 74 further comprising the output controller delivering the data content to the selected one or more output devices.

78. (Previously presented) A data output method for rendering at an output device associated with a selected output system data content accessed from a wireless mobile information apparatus, the selected output system and the wireless mobile information apparatus not being in wired communication with each other, the method comprising:

establishing a radio communication channel directly between the wireless mobile information apparatus and the selected output system, the radio communication channel including a radio frequency wireless communication channel;

receiving at the mobile information apparatus over the radio communication channel one or more components from the selected output system, the one or more components including at least a device-dependent attribute corresponding to the selected output system;

conforming at the wireless mobile information apparatus the data content to device-dependent output data employing at least in part the one or more components; and

delivering the device-dependent output data to the selected output system for rendering by the output device.

79. (Cancelled)

80. (Original) The method of claim 78 in which the selected output system includes a network.

81. (Original) The method of claim 78 in which the selected output system includes at least one output device and at least one output controller.

82. (Previously presented) The method of claim 78 in which an output controller associated with the selected output system communicates with the wireless mobile information apparatus.

83. (Previously presented) The method of claim 82 in which the output controller is one of a server, an external controller, an internal controller, and a data access point.

84. (Original) The method of claim 82 in which the output controller receives the output data.

85. (Original) The method of claim 82 in which the output controller performs raster image processing on the output data.

86. (Original) The method of claim 84 further including converting the output data into a form compatible to the output devices.

87. (Original) The method of claim 84 further comprising the output controller delivering the output data to the output devices.

88. (Original) The method of claim 78 in which the one or more components are stored in one or more output controllers associated with the output devices.

89. (Original) The method of claim 78 in which the one or more components include at least part of a printer driver.

90. (Previously presented) The method of claim 78 in which the one or more components include software code or executable software.

91. (Cancelled) The method of claim 78 in which the one or more components include one or more device dependent information or parameter relating to the selected output device.

92. (Previously presented) The method of claim 78 in which the one or more components relate to one or more of a device driver, a printer driver, an output driver, a display driver, an audio driver, a projection driver, and an user interface.

93. (Original) The method of claim 78 in which the one or more components include information characterizing an output service provided by the selected output system.

94. (Cancelled) The method of claim 78 in which the one or more components include a software application.

95. (Previously presented) The method of claim 78 in which the wireless mobile information apparatus being one or more of a mobile computing device, a pervasive device, an Internet-enabled cellular phone, a smart phone, an Internet appliance, a digital camera, and a personal computer.

96. (Previously presented) The method of claim 78 in which the output device includes one or more of a printing device, a projection device, a display device, and an audio output device, individually or in combination.

97. (Previously presented) The method of claim 78 in which the wireless communication channel is compatible with a Bluetooth wireless protocol or a IEEE 802.11 protocol.

98. (Previously presented) The method of claim 1 in which the wireless communication channel is compatible with a Bluetooth wireless protocol or a IEEE 802.11 protocol.

99. (Previously presented) The method of claim 33 in which the wireless communication channel is compatible with a Bluetooth wireless protocol or a IEEE 802.11 protocol.

100. (Previously presented) The medium of claim 65 in which the wireless communication channel is compatible with a Bluetooth wireless protocol or a IEEE 802.11 protocol.

101. (Previously presented) The medium of claim 65 further including software for discovering the selected output device via wireless discovery.

102. (Previously presented) A wireless mobile information apparatus for outputting data content accessed from the wireless mobile information apparatus for rendering at one or more output devices, the one or more output devices and the wireless mobile information apparatus not being in wired communication with each other, the wireless mobile apparatus comprising:

- a memory unit;
- a radio wireless communication unit; and

a processing unit for operating the radio wireless communication unit to establish a radio communication channel directly between the wireless mobile information apparatus and the one or more output devices, the radio communication channel including a radio frequency wireless communication channel, the processing unit further being operable to execute software stored in the memory unit to:

receive at the wireless mobile information apparatus over the radio communication channel one or more attributes corresponding to the one or more output devices,

select at the wireless mobile information apparatus a selected output device from the one or more output devices,

generate a device-dependent output data from the data content based at least in part on the one or more attributes relating to the selected output device, and

deliver the device-dependent output data over the radio communication channel directly from the wireless mobile information apparatus to the selected output device for rendering.

103. (Previously presented) The apparatus of claim 102 in which the data content is stored in the memory unit of the wireless mobile information apparatus.

104. (Previously presented) The apparatus of claim 102 in which the wireless communication channel is compatible with a Bluetooth wireless protocol or an IEEE 802.11 protocol.

105. (Previously presented) The apparatus of claim 102 in which the processing unit is further operable to execute software stored in the memory unit to discover the one or more output devices via wireless discovery.

106. (Previously presented) The apparatus of claim 102 in which the wireless mobile information apparatus includes at least one of a digital camera, an Internet-enabled cellular phone, a smart phone, an Internet appliance, and a personal computer.

107. (Previously presented) The apparatus of claim 102 in which the data content is a digital content and the one or more output devices include at least

one of a display device, a printing device, an audio output device, and a projection device.

108. (Previously presented) A wireless mobile information apparatus for outputting data content accessed from the wireless mobile information apparatus for rendering at a selected output device, the selected output device and the wireless mobile information apparatus not being in wired communication with each other, the wireless mobile apparatus comprising:

a memory unit;

a radio wireless communication unit for establishing a radio wireless communication channel directly between the wireless mobile information apparatus and the selected output device, the radio wireless communication channel including a radio frequency wireless communication channel; and

a processing unit operable to execute software stored in the memory unit to:

receive at the wireless mobile information apparatus and over the direct radio wireless communication channel one or more components associated with the selected output device, the one or more components including at least a device-dependent attribute corresponding the selected output device,

conform at the wireless mobile information apparatus the data content to a device-dependent output data associated with the selected output device employing at least in part the one or more components, and

deliver the device-dependent output data to the selected output device via the direct radio wireless communication channel for rendering.

109. (Previously presented) The apparatus of claim 108 in which the data content is stored in the memory unit of the wireless mobile information apparatus.

110. (Previously presented) The apparatus of claim 108 in which the wireless communication channel is compatible with a Bluetooth wireless protocol or an IEEE 802.11 protocol.

111. (Previously presented) The apparatus of claim 108 in which the processing unit is further operable to execute software stored in the memory unit to discover the one or more output devices via wireless discovery.

112. (Previously presented) The apparatus of claim 108 in which the wireless mobile information apparatus including at least one of a digital camera, an Internet-enabled cellular phone, a smart phone, an Internet appliance, and a personal computer.

113. (Previously presented) The apparatus of claim 108 in which the data content is a digital content and the selected output device includes at least one of a display device, a printing device, an audio output device, and a projection device.